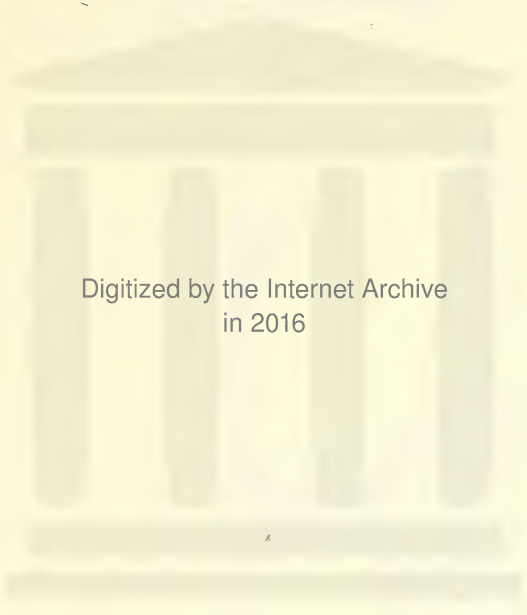


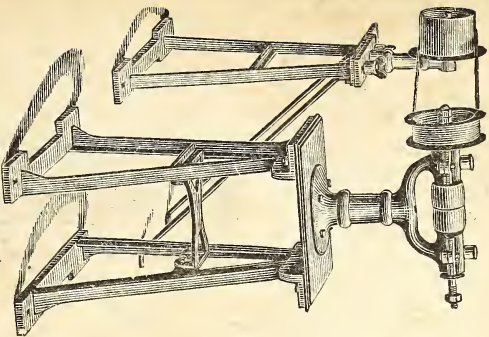
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BRONZERS, GILDERS,
Platers, Polishers
—AND—
Painters
GUIDE BOOK.





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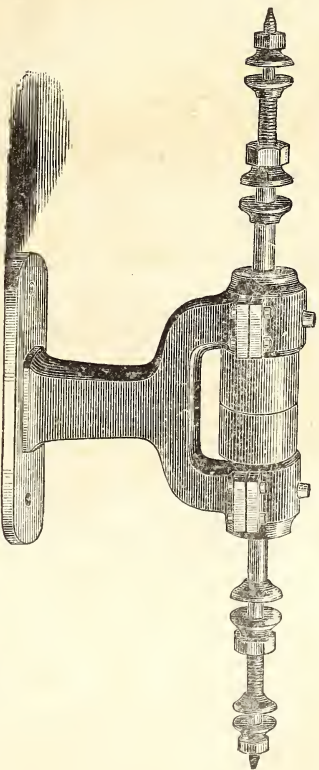


No. 1 BELT MACHINE.

This machine has a No. 2 Buffing Lathe as the driving part; placed upon an iron table as seen in the cut. The Pedestal which holds the other pulley is adjustable upon the back leg by means of thumb screws. This lathe has flange pulleys 6 inches in diameter.

PRICE, \$46.00.
" WITHOUT THE TABLE, \$6.00.

This has a spindle 3 feet 9 inches, and arranged as seen in the cut for four wheels. Weight 83 lbs. The spindles between the collars are $\frac{3}{4}$ and 1 inch in diameter. PRICE, \$30.00



Polishing and Buffing Machinery,

MANUFACTURED BY

E. LYON & CO.

No. 470 $\frac{1}{2}$ Grand Street, New York.

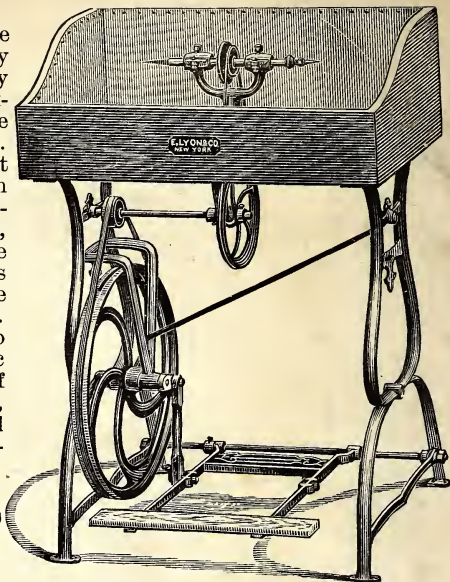
All of this Machinery is made in the best manner, with Steel Spindles and HARD METAL bearings, and is designed for quick speeds with Cloth and Brush Wheels, Walrus Leather, and Leather-covered wheels. Those machines have proved by long use to be the BEST in the market.

(OVER)

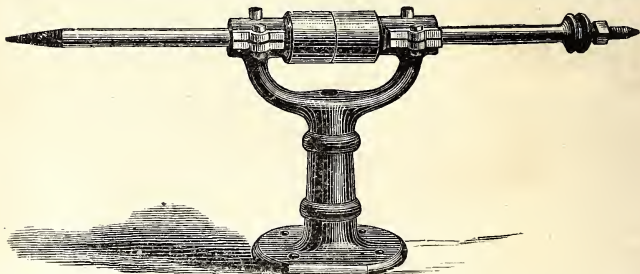
POLISHING LATHE.

These Lathes have been designed to supply a want, where economy of space and good workmanship were desirable in a foot-power Lathe. By means of the Patent V Belt we have been able to place a Counter-shaft under the table, which can only be done successfully by means of this belt. The table of this machine is 20 in. by 34 inches, with two drawers, and is zinc lined. The frame is of iron and well braced, and has a strong jointed treadle and turned pulleys.

Price, - - \$40.00



No. 2, LIGHT BUFFING LATHE.



These Lathes stand 12 inches high, and have spindles 2 feet 9 inches long, $1\frac{1}{4}$ inch diameter, and weigh 49 lbs. They are made with collars on each end of the spindle, one collar and one screw, and two screws, also with fast and loose pulleys, and with one wide and fast pulley. The spindle between the collars is $\frac{3}{4}$ inch in diameter. Unless otherwise stated orders will be filled with tight and loose pulleys 3 in. diameter and 2 in. wide, and with one collar and one screw as shown in the cut. Price, - - - - \$16.00

E. LYON & CO., 470 $\frac{1}{2}$ GRAND STREET, N. Y.

THE
Bronzers,' Gilders,' Platers,'
POLISHERS,' AND PAINTERS'
GUIDE BOOK.

BY
MORGAN L. CURTIS.

NEW YORK :

JOHN P. PRALL, PRINTER BY STEAM, NO. 9 SPRUCE STREET.

1881.

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Wilcox & Gibbs, Broadway and Bond, ...	"
Mary Mason Jones, House 57th Street and 5th Avenue, . . .	"
North Wing, U. S. Treasury	Washington, D. C.
Real Bronze Work, East Front Capitol, Bronze Lamp Posts, etc.	"
Galt Brothers, Jewelers, ...	"
Newark Mutual Benefit Life Insurance Co.	Newark, N. J.
Mechanics' Bank, ...	"
State Bank, ...	"
Newark Banking Co.	"
Newark Dime Savings Bank, ...	"
North Dutch Church	"
And many hundred other buildings.	

P R E F A C E .

In preparing the twenty-five receipts for doing as many different kinds and styles of Bronzing, Dipping, Lacquering, Polishing, Nickel and Silver Plating, House Painting, etc. it has been the intention to furnish within a small compass and at a low price, a Pocket Guide Book, containing the most recent discoveries in the art and science of finishing metals, painting, etc. Care has been taken to avoid as much as possible the difficult technical terms and to simplify the language, that the general reader shall not be embarrassed by expressions unfamiliar to him. If the rules and general directions herein given be followed with care, the desired result will be produced. It has been the intention to put only such receipts and general directions in this book as have been practically applied with success in the general prosecution of my business, which has been the manufacturing of gas fixtures and bronze work, in the city of New York, for the past twenty-five years; and herein refer to a few of the many places I have furnished with gas fixtures and bronze work of my own design and manufacture, and is thus presented in the hope that it may prove as intended, a practical pocket guide book.

MORGAN L. CURTIS.

BRONZING.

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THE ART

OF

HOUSE PAINTING.

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BRONZERS' & GILDERS' GUIDE BOOK.

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REAL BRONZE, AND ITS ORIGIN.

A combination of metals which has received the name of Bronze was employed by the Ancients in the fabrication of different utensils, and in casting busts, statues, and other objects.

The Egyptians, Greeks, and Romans, used this compound metal in the greater part of the decorations of those magnificent temples and palaces, whose ruins have remained to later eras, but amidst the general wreck, there are some fragments preserved which indicate the perfection which has been attained in the employment of Bronze.

The wealth of some ancient cities, was estimated by the number of their brazen statues, and Deephos, Athens, and Rhodes are reported to have each possessed three thousand; some distinguished Romans adorned their city in this manner, and so strong a propensity was exhibited for multiplying works of this kind that an observation became current that in Rome, the People of Brass were not less numerous than the Roman People.

It has been remarked that works which we now execute in iron and steel were little known to the Ancients. That their arms and armorers were usually of Bronze, now alluded to, and that a set of surgeons' instruments, entirely of Bronze, was discovered in Pompeii.

The ancient Bronzes, are of the alloys of copper and tin. Those examined by Klaproth, Davey and others, whether from Greece or Italy, contain from 11 to 13 per cent. of tin. Nearly the same proportions are used in modern Bronzes in casting statues. Steele of Edinburgh, in his fine statue of Wellington, used 90 copper to 10 of tin—same proportions used by Chantrey and Westmacott.

The best gun metal consists of 89 copper to 11 tin. Bronze is extremely hard and more brittle than brass and more fusible than copper, and not liable to tarnish. It is peculiarly adapted to casts and statues.

Various nations have compounded the metal, employed in different proportions. According to Pliny, the Bronze of the Grecians was formed in the same way, with the addition of one-tenth part lead and a twentieth of silver, which proportions were adopted by the Romans. The ancient Bronzes, however, present a different appearance from those used by the Moderns; and the fact is ascertained in respect to the metallic proportions by skilful chemists.

An illustration of this fact is sometimes given in the four celebrated horses of Bronze supposed to be the work of Tysippus, a Greek artist, which were brought from Venice, by command of Bonaparte, to the Tuille-

ries at Paris, and on the fall of that extraordinary man were restored to their original position.

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FRENCH BRONZE POWDER.

Dust Bronzing is usually applied to plain or smooth work. The work should in all cases be first cleaned and made free from grease. Apply a coat of copal varnish, slightly diluted with turpentine : in the space of eight to twelve minutes it will be sufficiently dry to receive the Bronze. The Bronze is applied by using a camel's hair brush. The Bronze should be brushed all over the work. In this way the work receives a thin coat of Bronze. After it has become dry wipe off the surplus Bronze and varnish with spirit varnish diluted with alcohol, this will dry in a few minutes.

A desirable color can be produced by mixing copper and orange Bronze Powders, two parts copper to one of orange, thoroughly mixed. This is the mixture now used on gas fixtures, clocks, statues, &c. By adding more orange a lighter color will be produced, and of copper a reddish color.

———— :o: ————

FRENCH BRONZE IN RELIEF.

First clean the work, then make black. If the work is composed of any kind of soft metal, vinegar and lamp black, with a little *sal amoniac*, should be applied.

after it has become dry brush off with a stiff brush, and varnish with copal varnish. When it has become quite dry apply the Bronze in the following manner.

Take a piece of pine board planed smooth, say ten inches square, place on the board about a half teaspoonfull of copal varnish; take a small quantity of Bronze, same as used in dust Bronze; use a half inch bristle brush, and thoroughly mix the Bronze on the board and work the Bronze into the brush; then apply the Bronze to the high or prominent parts of the work. This will produce a very handsome Bronze with a dark ground relief. Care should be taken not to get too much Bronze or varnish in the brush at one time, the Bronze should be mixed as it is used; if it should stand any length of time it will soon become set, and will not work smoothly; after a sufficient amount of Bronze is applied to get the desired shade the work should be varnished with spirit varnish; if it is a fine piece of work bees wax may be applied by taking a hard brush and rubbing it over a piece of bees wax and then brush the work; this will produce more of a smooth surface on the work; for ordinary gas fixtures the waxing is unnecessary.

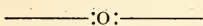
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BRONZE FOR TIN OR SOFT METAL.

Take sulphate of iron and sulphate of copper, each one ounce; water one pint; dissolve and wash the surface or dip the article in the solution, then dry and

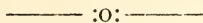
apply a solution of verdigris, two ounces dissolved in half pint strong vinegar ; dry again. Polish with plate brush and plumbago ; this may be varnished or lacquered.

This makes a very rich bronze, and very durable.



LIQUID PAINT BRONZE.

There are several kinds of liquid paint mixtures in the market. They are made expressly for mixing with Bronze powder ; some of them work very well. It should be mixed in small quantities as it dries very quickly ; it may be applied by the brush in the style of painting ; care should be taken to not apply too many coats in rapid succession ; Bronze mixed with copal varnish and applied in the same way, will be found to be cheaper than the liquid size. In either case the article should be finished with spirit varnish. For steam radiators the liquid size only should be used.



ARTISTIC BRONZE.

This Bronze is made by using two colors of Bronze powders, and is used in the following manner : first apply a coat of copal varnish, after it is slightly dried apply copper bronze powder to the high or prominent parts ; then brush green Bronze powder all over the article.

Wherever the copper has been applied, the green

will not adhere to the work, as the varnish has been absorbed by the copper bronze; the copper should then be applied by taking a piece of chamois skin and dipping it into the bronze, rub it over the work.

This style of Bronze is particularly applicable to any kind of leaf work, or any highly ornamented work; it is much used in Paris on small fancy articles.

This Bronze may be varnished or not; it is more brilliant without varnish, but will be less durable.

If the work is varnished, shellac varnish should be used, other colors may be applied in the same way.

————:o:————

Verd-Antique for Soft Metal.

First, prepare and apply the green ground, which is made in the following way: take crystallized verdigris, and compound green and add oxide of lead and copal varnish, mix in such proportions as the case may require; if a light green ground is required, add the oxide of lead; this mixture should be thoroughly mixed by grinding on a stone, or in a paint mill; the mixture may require a small quantity of turpentine to thin it; apply this with a brush; after it has become dry, apply the next coat of green in the following way: take half tea cup of permanent or Bronze green; add a small quantity of water, and stir it well; then add half table-spoonful of dissolved gum Arabic, and one table-spoon of dry white lead (or oxide of lead), then stir all together and thoroughly mix; then take a

brush and apply this all over the article, as soon as the work is covered, take a wet rag and wipe off the high or prominent parts, this will leave a dry frosty green on the lower parts, and the dark green in the high parts, in this way the two shades become blended together. A rag with a little oil may then be used to rub over the high parts to make it clean. No oil should touch the lower portion of the work. A black may be used with this green, and makes a very fine finish for gas fixtures, &c.

————:o:————

Verd-Antique for Brass or Real Bronze.

To give the antique appearance to new work, first thoroughly clean the work, and make it free from grease, then make the solution.

Take one part sal amoniac, three parts cream tartar, six parts common salt, twelve parts hot water, dissolve all and stir them together. Then add eight parts of a solution of nitrate of copper, specific gravity of 1.160. This compound, when applied repeatedly in a moderately damp place, gives the work a durable green coat which becomes by degrees very beautiful.

The addition of salt gives the work a yellowish tinge, less salt a bluish cast, an addition of sal amoniac accelerates the mordant, after the desired shade has been produced by the repeated application of the solution, it should then be dried and the prominent parts may then be brushed slightly with a plate brush, or rubbed with a chamois skin ; wherever it is rubbed or

brushed it will become darker, thus producing the relief it requires ; no varnish or lacquer should be applied to this style of Bronzing.

The finest clocks and statues are bronzed by this process.

—:O:—

Blue Bronze for Church Work.

Thoroughly clean the work ; then apply a coat of gum Arabic, let it stand a few minutes, then apply the bronze with a brush.

Prepare the Bronze in the following manner : take three quarters of a tea cup of ultra marine blue ; add a little water and stir it thoroughly ; add one tea-spoonful of gum Arabic, one-half tea-spoon dry white lead, mix all together and dilute with water, until it is thin enough to work smoothly ; two coats are required ; let the first coat get dry before the second is applied.

The gum Arabic is used to hold the bronze on the work ; no varnish or lacquer should be used. This process produces a very beautiful, soft, velvet-like appearance.

The blue is usually applied to the plain parts of gas fixtures, the more ornamental parts are finished in gilt.

This style is much used in churches, both in Europe and this country.

Copper Bronze for Burnishing.

To make a copper solution or dip, take one quart muriatic acid, add sulphate copper one quarter pound, two ounces of arsenic, one table-spoon of wrought iron turnings, add a little water, and dip the work in several times, or until it receives a copper color. It should then be dried out and burnished and lacquered, with shellac lacquer.

If the work is burnished before it is dipped in this solution, it will come out bright. This finish is much used on builders' hardware, and many kinds of fancy goods. If the bronze or dip, should not work on the metal, after it has been made for several days, it should be heated over a slow fire or a steam kettle; it should also be kept covered in a stone pot, when not in use.

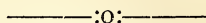
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Damascus Bronze for Gun Barrels, etc.

For the bronzing operation known as Damascus Bronze, the process is as follows: first clean the work and make free from grease, the work is then treated to a solution of diluted nitric acid and vinegar, to which a small quantity of sulphate of copper should be added.

The result is that metallic copper is deposited irregularly over the work, then wash clean and dry; apply a little sweet oil; when it is dry, take a plate brush

and polish ; if it is a gun barrel it should receive a coat of shellac lacquer, put on quite thin and uniformly, by slightly heating the barrel, then apply the lacquer with a soft camel's hair brush, this produces a beautiful brown color, which is very desirable, as it is less attractive to game, and is less conspicuous to the enemy in time of war.



Japanese Bronze for Brass or Real Bronze.

The work to be bronzed should first be made bright and perfectly clean.

Prepare the solution in the following manner ; take two ounces verdigris, two ounces cinnebar, five ounces sal ammoniac, five ounces alum, all in powder ; then mix them into a paste with strong vinegar.

Then take a brush and spread this quite thickly over the work, hold the article over a clear fire, or heat uniformly over a furnace, or in an oven ; then cool, wash clean and dry. If the first application does not produce the desired color, or is not deep enough, then repeat the operation in the same way. An addition of sulphate of copper makes the color incline more to a chestnut brown, and of borax to a yellow.

The last process is to polish with a hand plate brush, and give the work a coat of shellac varnish, put on quite thin with a camel's hair brush.

Waxing may be applied if the work is fine.

Dark Green for Medals and Coins.

First, thoroughly clean, then prepare the following solution: sal amoniac one part, cream of tartar three, common salt six, hot water twelve, nitrate of copper four; then dip the work into this solution repeatedly: a copper boiler is the best thing to use for the solution; if it should not work rapidly the solution may be heated after the desired color has been obtained; the work should be washed, dried and rubbed with a chamois skin; lacquer may be applied to prevent tarnishing.

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Bronze for Wood or Plaster.

First, the work should be coated over with a mixture of size and lamp black, and then dried. Then a bronze powder consisting of very finely divided paint, yellow, raw umber, pipe clay, lamp black, and Prussian blue; this is applied with a brush, then dry again, the article is polished with a cloth, or leather covered with a layer of castile soap; lastly, clean off with a woolen cloth.

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Bronze of Zinc or Soft Metal.

Make a solution or dip in the following way: take one ounce of sal amoniac, one-half ounce of alum, one

half ounce arsenic, dissolve in one-half pint strong vinegar. If the work is small, it may be dipped in the solution, if large, it should be applied with a rag to prevent streaking. The color will depend on the number of times the solution is applied.

The work should then be washed, dried, and varnished with shellac varnish.

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Poladium Bronze.

This bronze is for coloring brass, copper, or real bronze, to give it a dark rich color, it works very quick, but it is expensive.

This is made of the chloride of poladium, called chemical bronze, make in the following manner: take one quart of muriatic acid, add four ounces arsenic, fifty drops of the chloride of poladium, this should be thoroughly stirred and daubed on with a linen rag to avoid streaking. If the work is large, its effect is very sudden; after applying, wash off with clean water, and if the desired color is not produced, repeat the application; after using, it should be put in a tight bottle or stone pot.

If the work is small it may be placed on copper wire and dipped in the solution. Long tubes may be bronzed by holding them over the pot in an upright position, and pouring the solution over the work with a pitcher; it should color in two minutes. After the desired shade has been produced, rinse off with clear

water, and dry out with hot water, and rub with paper shavings ; if tubes or small work, it may be lacquered with color to suit.

————:O:————

Finish for Real Bronze or Brass.

This is acknowledged to be the richest bronze finish now used.

First clean the article and make free from grease, then take one quart water, add one quart muriatic acid, four ounces arsenic, forty drops chloride of poladium ; if this is found to be too strong, so as to make fumes, when applied to the work, or if it should boil or foam, then dilute with water, apply this to the article to be bronzed, until a dry black is produced, then wash off and dry. Then take sand and water on a rag, and scour the high parts of the work, until the metal shows through the black sufficient to make the relief, then again dry, and varnish with copal varnish made quite thin ; when this has nearly dried, then apply with a chamois skin, a powder known as *sanguin*, until a clear transparent relief is produced, then again varnish with thin copal varnish.

————:O:————

Bronze to Imitate Brass.

This preparation is made to imitate brass or to give the article the appearance of being brass.

There are two kinds, the real brass or bronze, and the yellow gilt brass; the latter is only made of copper filings, the finest that can be found; with the former it is used by mixing some red ochre, finely pulverized and both are used with varnish.

In order to make a fine brass that will not take any rust or verdigris, it must be put on with a chafing dish of coals, as it is applied.

The finest brass color is made of powdered brass, imported from Germany, mixed with varnish, which is prepared and used thus. The varnish is composed of one pound four ounces of spirits of wine, two ounces gum lac, two ounces sandarach.

The last two drugs being pulverized separately, and afterwards dissolved in spirits of wine, care being taken to fill the bottle but half full; the varnish being made, mix a quantity of it with pulverized brass and apply it with a brush; too much must not be mixed at once, as the varnish dries very quickly. In this manner figures of plaster are made to look almost as though they were of cast brass.

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Chestnut Brown for Brass.

First thoroughly clean the work and make bright, then polish with a plate brush and common crocus powder, jewellers' rouge, previously made into a smooth paste with water.

Then heat the work uniformly over a furnace or a

clear fire, and let it cool ; then again polish with the same brush ; if the work does not receive the desired shade the first time the process should be repeated. The work may then be lacquered with shellac lacquer, made very thin ; the work should be heated slightly before applying the lacquer, which should be put on evenly and with great care.

A much darker and more desirable bronze may be produced by the same process as the last, by substituting finely powdered plumbago for crocus powder ; shellac varnish may be used for this. In either case the work must be handled with care until it gets cold, as the touch of a finger will leave a mark.

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Chinese Bronze for Copper.

First clean the work, then prepare the following solution : take verdigris and vermilion, each two ounces ; alum, five ounces ; sal amoniac, five ounces ; all in fine powder ; add vinegar, one pint ; then thoroughly mix and spread quite thickly over the work ; then uniformly heat the work over a clear fire ; then cool slowly ; wash and dry. The tint may be deepened by repeating the process. The addition of a small quantity of blue vitriol inclines the color to a chestnut brown, and a little borax to a yellowish brown. This bronze is used by the Chinese for coloring their copper tea urns, and other copper articles.

To Clean Polished Brass.

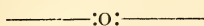
To clean brass that has not been lacquered or varnished: rotten stone, four ounces; oxalic acid in fine powder, one ounce; sweet oil, one and a half ounces; one ounce turpentine and a little water; and rub with a piece of leather; a strong lye of rock-alum and water is also used; in all cases where acid is used the article should be well washed and dried. Dry rotten stone on a chamois skin for the final finish is used.

—————:o:—————

Bright Dipping Acid.

Take two quarts of *aqua fortis*, two of sulphuric acid, mixed in a stone pot. It can be used as soon as mixed, but it will work much better if it is allowed to stand twelve hours before using; the work should first be dipped in hot potash lye, then into cold water, from the cold water into the acid, from the acid into cold water, from the cold water again into the lye, and again into clean water, then again into the acid; this should be repeated until the work comes out a clean bright color. The work should be run through the acid as quickly as possible. The last time the work should be run through perfectly clean water, and then into hot water; and then dried out by swinging in the air, or by paper shavings or box-wood sawdust; clean pine sawdust may be used. Two tubs of water are necessary; have one perfectly clean and free from

acid. The tubs are usually connected together, and the one nearest to the acid is supplied from the other tub; the second tub should stand under the draw-cock. Care should be used to keep the potash and acid off the hands, as it will make them sore if allowed to remain any length of time. Copper wire should be used to string the work on for dipping.



Burnishing Brass or Silver.

Burnishing is usually done with steel burnishers; blood stone is sometimes used. Burnishers are first made the required shape; some are made a hook shape; some of a claw shape. They should be about ten inches long; in wooden handles. These burnishers are polished very fine with emery and oil, so they will slip over the work without scratching, and give the work a bright color. There is also the double burnisher, which is made of half inch round steel, and twelve to fourteen inches long. On one end of each there is a hook formed, into which rings of various sizes are placed; this is to assist in holding the burnishers on the work. By placing one on the lower and one on the upper side of the tube, and rubbing hard, the burnisher takes effect, and the two sides are burnished at the same time. The work should be kept wet with sour beer, slightly diluted with water; common soap boiled down to a pulp is also used. After the work is burnished, it should be run through what is

called sharp water, to remove the tarnish ; this is made by adding about one-half a tea cup of *aqua fortis* and oil vitriol to one pail of water ; dry out with hot water and paper shavings or sawdust. Lathe burnishers are made an oval shape on the end, and highly polished.

To clean burnishers, take a piece of thick leather and nail it to the burnishing bench ; apply to it crocus or rouge, then rub the burnishers hard on the leather.

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Bright Gold Lacquer, and How to Apply.

This is the lacquer used on gas fixtures and all kinds of fine work. It should be applied by heating the work sufficiently hot to evaporate the alcohol as fast as it is applied ; but a small quantity of lacquer should be taken into the brush at one time. The lacquer should be applied evenly over the surface of the work ; a camel's hair brush should be used ; care must be taken not to over-heat the work, as it will cause the work to turn black ; the work should be made clean and bright by dipping, before the lacquer is applied.

To make two gallons—Prepare the lacquer in the following manner : first, deposit two gallons of proof alcohol in a three-gallon demijohn, then pulverize and add one and a half pounds shellac and one pound pulverized seed-lac ; then thoroughly shake once a day for ten days ; then decant into a small demijohn, through a funnel with filtering paper. Coloring materials may be added to suit the case ; if found too thick to work smoothly, dilute with alcohol : lacquer

should be placed in a bottle at night, or when not in use, as it will evaporate fast and will not work smoothly. Lacquers that have had coloring materials added, should not be put back in the original bottles.

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Gold Body Lacquer.

This lacquer is used for philosophical and telegraphic instruments, ship fixtures, and many kinds of brass goods, where a heavy body of lacquer is required. It should be applied by heating the work, and keeping it hot during the process of lacquering. If the work should become too cold while the lacquer is being applied, whatever is deposited while hot will come off with the fresh lacquer, when it gets partially cold ; but is very firm when entirely cold. Several coats should be applied in rapid succession ; in all cases a cold coat should be applied before the work is heated. This receipt is for making two gallons of lacquer in the following manner :

Place two gallons of proof alcohol in a three-gallon demijohn ; add to it one and a half pounds pulverized shellac, one pound pulverized gum sandarach, one pounds pulverized gum mastic, one and a half ounces gamboge, one half pound coarsely pulverized glass, one quart best turpentine varnish ; then thoroughly agitate or shake once a day for two weeks ; then decant and strain, with compression, into another demijohn. What is meant by compression is to place a piece of muslin over a funnel and pour some of the lacquer into

it, then close the muslin and hold fast with the left hand and squeeze with the right, or by the aid of two pieces of wood fastened together at one end. It should again be allowed to settle, and then it is ready for use. More coloring matter may be added, as the case may require. If the lacquer is found to be too thick to work well, more alcohol may be added. For very fine work, the lacquer may again be filtered through filtering paper.

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Coloring Materials for Lacquer.

To make four kinds of coloring materials. Take four one-quart bottles, and place in each one half pint proof alcohol ; to the first, add one quarter pound pulverized dragon's blood, to the second, add one-quarter pound red sanders, to third, one quarter pound tumeric, to the fourth, add one-quarter pound gamboge ; a small quantity of alcohol may be added in a few days. All these should be shaken once or twice a day for a week or more. From these almost any shade can be produced. Filtering will improve all the above coloring matter. A few drops of either of the above will change the color of a half-pint of lacquer. Some judgment should be used in adding the colors. In some cases two or three may be used to advantage in the same pot of lacquer.

Cleaning or Boiling Off.

Make potash lye in the following manner: to four gallons hot water, add one pound stone potash, or one half pound Babbitt's concentrated lye; dip the work into this, and agitate, and brush the work with the aid of a little sand, if the work is old. If new work, the sand may not be necessary. In boiling off old gilt work, the work should not be kept in the potash lye too long, and should be dipped immediately in clear, cold water, and finally run through sharp water, or water that has a very little acid in it. The acid immediately destroys the potash. It should then be dried out with hot water and sawdust, or paper shavings. In all cases the potash should be thoroughly removed. Care should be taken to keep potash from the hands and clothing.

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Nickel and Silver Plating.

In consequence of the great and constantly increasing demand for articles in the line of nickel plated goods, no brass finishing shop is complete without the necessary outfit to do nickel plating. It has been demonstrated that nickel plate, for a great variety of articles, is far superior to silver, for the following reasons: first, that nickel is a very much harder metal than silver, consequently, will wear much longer; second, it is very much cheaper, and can be deposited

with great rapidity, and will not tarnish as quick as silver. Nickel plate is now being done with such skill, that the work is brought out so white or so near the color of silver, that many do not notice the difference unless they make a critical examination. To do either nickel or silver plating with success, great care should be taken to have the article to be plated absolutely clean and free from grease or finger marks. The article should be smooth and free from file scratches or any corrosive matter. If the article be new work it should first be finished on the emery wheels of such grade as the case may require. After the work has been advanced by the emery wheel, it should next be applied to the brush wheel, first charging the brush with composition rouge; from the brush wheel it should be finely finished on the cotton wheel, with the rouge or a composition made expressly for such work. After the work is thus finished it should be run through hot potash lye. If the article be brass, copper, or real bronze, it should then be dipped in the regular bright dipping acid, which is made by mixing equal parts of sulphuric and nitric acids. It should be run through the acid quickly, and thoroughly washed off with clean water. If the article to be plated is iron, it should be run through what is known as sharp water, which is made by mixing six parts water with one part sulphuric acid. If the work does not come out clean and bright, take a woollen rag and common white sand and scour it; then again wash off in clean water; it is then ready for the solution. If the battery is in order, and the solution properly made, from ten to fifteen minutes is

sufficient to deposit nickel sufficient to polish nicely with the use of the cotton wheel and the nickel finishing rouge made expressly for the purpose. The lathe used for this work is what is known in the trade as the polishing lathe ; the arbor is from thirty to thirty-six inches long ; on one end is a course taper thread, for the brush or felt wheels, on the other is the nut and two flanges for holding the cotton and other wheels. All supplies for this work may be readily obtained by applying to Zucker & Levett, 540 West 16th Street, New York. See card in this book.

Batteries, Groves' nitro chromic or the Smee batteries may be used with one or more cells, as the case may require. If a large number of cells are required to do the work, they may be replaced by the American Dynamo Electric Machine, which is now in use in many large establishments, and is highly recommended by platers and others.

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Solution for Silver Plating.

How to make six gallons silver solution: take 5 oz. fine grain silver, place it in a large earthen bowl ; then pour on to it about one half pint nitric acid ; it will immediately commence to dissolve ; when it is dissolved add to the acid in the bowl about three quarts water, then dissolve 1 pound cyanide potassium in a separate dish with a little warm water ; after it is dissolved, add this to the water and silver ; this precipitates the silver

to the bottom of the dish in a white, pulpy form ; then pour off the water from the silver ; take the silver and add to it six gallons clean soft water, to this add about two pounds dissolved cynide potassium ; the solution is then ready to use as soon as it becomes settled. The work should be prepared the same as for nickel plating. Silver plated work should be burnished instead of polished unless the deposit is very thick.

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Polishing Metals.

The demand for polished bronze and brass work is very great and constantly increasing, especially for gas fixtures, mantel ornaments, and a great variety of articles in metal. I will, therefore, give the general rules to be observed in metal finishing or polishing. If the article be new castings, brass or zinc, the emery grinder with wooden wheels, covered with leather or walrus hide, then covered with emery, should be used, as my experience has proved that wooden wheels are best for such work. The wheels should be made by placing together two or more thicknesses with the grain crossing each other, to prevent warping or getting out of true, they should be either pinned or screwed together with a coat of glue between each. They should then be placed on the iron collars and screwed fast ; then place the wheel on the arbor and turn it off true both on the face and sides ; then glue and peg on the leather, and when dry again turn off

true ; then apply the glue, so as to prevent its running; then roll the wheel with compression in the box of emery. The box should be about four feet long by five inches wide and high. Wheels should stand six or eight hours before using ; it is the best way to renew the wheels at night, so they may be ready for use in the morning. The grade of emery to be used should be determined by the condition of the article to be finished ; if a large surface is to be cut off, coarse emery and large wheels should be first used, then finer; after the emery wheels have cut off the rough surface, and the deep scratches have been removed, it should then go to the polishing lathe, which is usually made with a three feet arbor. The bristle brush should first be used, charged with the hard composition rouge ; after the smooth surface has been obtained the cotton wheel should be used with the fine finishing rouge ; after the article has received a high polish, it should be run through hot potash lye, and then through sharp water, and dried out with hot water and sawdust or paper shavings. Felt wheels are also much used for flat work. Lastly, the article should be neatly lacquered.

THE
❖ART OF HOUSE PAINTING.❖

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OUTSIDE PAINTING.

PRIMING NEW WOOD WORK.

PREPARATIONS.—First, let the wood get perfectly dry from rains, storms or dampness, then cover all the knots and pitchy places with a varnish made of gum-shellac dissolved in alcohol to about the thickness of molasses. Apply the varnish with a small brush. It dries very quick, and the paint may then be put on.

MATERIALS.—The paint should be the best white lead mixed in pure raw linseed oil. Turpentine may be used in winter to make the paint work easy, as the oil is apt to chill and the paint become thick and work tough under the brush; but in summer it should not be used in priming but in places where the sun does not reach. In winter, it will be necessary to put in litharge, or some other drier; but in summer, drier is not much needed for priming, for good oil will dry of itself in a day or two, and if the wood is seasoned, and as dry as it should be, there is not much danger of showers or storms washing off the paint, as it will mostly be absorbed in the surface.

MIXING.—The lead or zinc paint thus mixed may be colored by the addition of ochre, Spanish brown, etc.,

directions for which will be given under its proper head. Priming outside should always be made as light-colored as possible. If the house or building is to be finished white, of course the priming should be white ; but if it is to be finished a brown, the priming should be a light brown. The same in regard to any other color intended to be the finish, because, if this rule is adhered to, the first colors will not show through so soon by wear, or in joints which may partially open by the weather ; besides, a less quantity of paint is required to finish and cover ; and it is well to have it understood at the beginning, that too much paint can be put on outside wood-work—that is, it can be put on too thick in any one application.

BRUSHES.—The priming color should be applied with a good brush of the largest 6 O size, bridled, if a new one, about one-third the length of the bristles, with good twine, and as the brush wears, the binding or bridle to be taken off. Care should be taken to use or wear the brush flat or wedge-shape with a straight tip. This can be done by holding it always in one position in the hand. If it is suffered to turn round, it will wear stubby and be unfit to do good or smooth work. As brushes cost a good deal of money, it is essential that great care should be taken in their use and in preserving them.

PRESERVING BRUSHES.—If they are in every-day use, they should be put every night in water, standing them very carefully in a tub or other vessel, and not let the water reach more than half way the length of the bristles. But if the painting is all done, and the

brushes are yet good, they may be preserved for a long time by washing them out clean in warm water and soap, and laying them away in a moist place. Care should be taken, however, to have all the paint taken entirely out of them by first washing them thoroughly with turpentine.

CONSISTENCY OF PAINT.—The paint should be thin enough for priming to work easy under the brush, and not run or drip on the surface, as it will if too thin. It should not be thick enough to cover the grain of the wood, for it would be apt to blister after a time, and would work very tough and hard while being put on. Care should be taken that every potful of paint used should be of the same consistency, for if one part is painted or primed with thick paint and the other with thin, it will not be long before it will show in patches and spots, which spoil the looks of the building.

APPLICATION.—Apply the paint on about a square yard or more, without regard to smoothing it off, or a much larger space, according to circumstances, or as far as a man can well reach from a ladder. Get the paint on evenly, and then commence to smooth or lay it off, drawing the brush evenly and straightly across the surface covered.

ECONOMY OF APPLICATION.—It is notorious that many good painters lose one-quarter of their time in laying or smoothing off small parts of their work. Instead of covering a large surface as convenient evenly first, as stated above, and then smoothing it, they actually, as a necessary consequence of their mode of working, smooth or lay off their work many times over, because

if they paint one board, for instance, and smooth it off, as I have seen many continually do, in covering the next board they rough up the paint on the first, which has to be smoothed again. And so they do their work over and over, and make less headway than would one who understood the economy of the method of applying paint. I mention this because I have suffered losses on contract painting from this cause, and because it is proper that journeymen should be reminded of these things, and also that all men employing workmen should be able to judge of their work.

LAPS.—Laps are the joinings of two applications, or the edges of the stretch coming together and forming two coats wherever the lap is made. They should be avoided, because they present a very great disfigurement to the eye, and will remain a long time, even showing after the building is several times painted. It is the best to prime but a few boards, or a narrow space across the building at a time, or, if working on ladders and not being easy to move often, by care in rubbing out properly at the edges the lap may be avoided. In the joining of two stretches, much care and skill is required, or defects will show when the paint is dry which did not appear at the time of applying it. The brush must be drawn straight and even, and lifted gradually and finely as it reaches the extent of the stretch, or the place of joining. This is, however, more particular in second coating, or in finishing.

BRUSHING.—Priming should be rubbed out considerably, not flowed on loosely, as it will blister and run. The brush should work easy, at the same time a pres-

sure be exerted as if to rub the paint into the wood. The only exception to this latter rule is in priming over spots which are very open and discolored ; then the painter should lay on more paint and rub it out less ; because such spots cannot be touched up after the work is second-coated or finished without a positive disfigurement, particularly on all colors except white.

COLORING MATERIALS.—The best coloring in mixing paint for priming, or for any other painting, is pure, dry French ochre, Spanish brown, Venetian red, and lampblack ; with these almost any desired color can be made with white lead or zinc. Umber, terra sienna Indian red, etc., are sometimes used, but they are more expensive than durable ; although a richer color may be obtained with them, yet in ordinary house-painting the richness is scarcely distinguishable from work done with the first-named ingredients, and, besides, it is not by any means so durable. The colors should first be broken or mixed up each by itself, and added to the principal ingredient in such proportions as will produce the color desired. First make a trial with a very small quantity, in order to get at the color wanted, as well as to estimate the proportion of each color to make it.

PURE PAINTS.—The colors are better for being ground in a paint-mill. They can be bought already ground, but there is a great deal of adulteration in the manufacture of such paints, there being only a few in the business who can be relied upon to furnish them perfectly pure ; and as the prevailing fashion of tints in house-painting is such as to require the principal

ingredient to be of such coloring, it is essential that they should be pure, or the work will not endure, but fade and discolor very quickly. The advantage of the best and purest materials for painting is not only in its durability, but also in its economy. The highest price and the best article is the cheapest to the painter and his employer in all cases.

ZINC PAINT.—White lead, however, I should recommend as the foundation and principle of all exterior painting.

SYSTEM.—In the application of paint in priming, as well as finishing, it is essential that the workman should observe a system in order to accomplish as much work as possible in a given time with the usual amount of labor. Some men will work very hard without a system, and do a small day's work; others work easily along, systematically, and do a much greater quantity of work, and do it well. In painting fences, railings, lattices, or blinds, and other similar work, a system is absolutely necessary. A half-hour's experience of the workman will teach him the proper mode on most of such work; but on blinds and picket or baluster fence a few directions may not be out of place here.

BLINDS.—Lay the blind on trestles or on two barrels, with the stick or inside up. Paint all that can be painted from this side by turning the slats to and fro, but not necessarily reaching the brush through to cover all the slat. Paint the edges of the blind, and then smooth off only the stiles and stick; then turn over and cover what remains of the slats and stiles. See

that the inside edges are covered by running the brush in between the slats, also the ends of the slats both before and after turning, as well also as the edges of the slats; thus the blind will be covered. Now proceed to smooth off by reaching the brush carefully through to the lower edge of the slat and drawing it evenly from end to end; first taking one side of the slats, then turning them down, holding them a little open and smoothing off the other side; then smooth off the stiles, and the blind is done. Stand it up with the inside out, in order to touch up where it rested on the trestles.

FENCES.—First paint the edges, both of the pickets or balusters and the rails, as well as the edges of the ribbon-strips and bottom-board, from the outside for six or seven feet. Thus the paint which gets on the faces in doing the edges, is so much gain, and the piece of fence so begun is more than half done, and the faces may then be covered and smoothed off by one stroke of the brush. The inside should be done last with the posts. No piece of fence should be left unfinished over night, as the runs will dry and look bad when completed.

LATTICES.—Take a large half worn brush, fill it full of paint, and lodge it on the work over as much space as the brushful will cover; then briskly rub it out over the same, covering the outside edges, and if the inside cannot be done, cover the inside edges by running the brush through. If the inside is to be done, leave the outside without smoothing off until the inside is done

the same as the outside ; then smooth off first the inside and then the outside.

ADVANTAGES OF SYSTEM.—System is essential in all work, and in every part. There is a certain place to begin, and a place to finish. On doors, architraves, panels, cornices, etc. ; the mouldings, beads and edges are first to be filled and covered ; next, the stiles and surrounding work over a considerable surface, say the whole side of a door or architrave, without laying off until well covered. In painting first the mouldings, etc., the other parts get nearly half covered ; and if this system is well and continually carried out, as all good workmen do, the result is rapid and good work. A systematic workman will also complete his work as he goes along, and not paint a patch here and a patch there, as if he had no particular design.

DRYING OIL.—Sometimes it is necessary to prime window frames and doors before they are set in the building, and in some cases the paint is required to be dry soon, that they may be handled by the carpenters or masons. In such cases the priming should be mixed with boiled oil and raw, in equal proportions, with a little turpentine. In any other case where the priming is required to dry quickly, the paint may be mixed in the same manner.

DRY WOOD.—There is no particular advantage gained in priming directly after the carpenters—that is, priming as fast as the work is put up, unless it might be in very hot weather. It is best to let the work season or dry out free from all dampness : and let it check and shrink if it will, so that some of the paint may be

absorbed in the surface, and the checks and joints put-tied up, so that they will not appear after the work has been finished, and thus render it necessary to putty and touch up again, to the injury of the work as regards its looks. In priming up to the carpenters, the work is liable to get full of sawdust and be otherwise disfigured; besides, the painter will necessarily lose much time in waiting and in not having a straightforward job to keep him for any particular portion of a day. If a small house, it is better that the carpenter were entirely finished and away, as regards the outside; then the priming can be done quickly and cleanly. On a large house, it is economy for all parties, as well as for the good of the work, for the painter to have two or three days' work ahead of him until the priming is completed. Some may say that wood should be primed as soon as put up in a building—that is, outside—to prevent it from shrinking and checking. My experience has proved abundantly to me, that the wood will check and shrink by the action of the sun's rays just as much in that case, and that it is far better, for the durability of both wood and paint, to let it get air and sun dried first. Frequent wetting by rains will not much, if any, retard the process of seasoning. For the same reasons, very little, if any work should be primed in the carpenter-shop. In our day, there is little lumber that is well seasoned; and however well seasoned it may be, all builders know that it is still liable to shrink and check. The manner in which lumber for outside work is generally kept is not such as to render it very dry for use.

In finishing outside work, use white lead and good French zinc in equal parts; or, for white finish, zinc alone.

OUTSIDE PAINTING.

DRYING.—In summer, priming coats will be sufficiently dry for second coating in two or three days; but in winter, a week at least is required to dry it hard enough to apply another coat.

BEST TIME TO PAINT.—As finishing coats will not dry readily in winter if mixed with good oil and without much turpentine, though with plenty of drier, I would advise that it be left over January, February and March. In all other months, my experience has determined that it is safe to apply finishing coats; but the best months for outside finishing and painting are September, October and November. In our latitude, it frequently occurs that December is a very good month for it.

Painting well done with proper material, in those months, will endure longer than if done in any other; because the coats will have all the winter to harden without being subject to the heat of the sun and the warm showers of summer, which wear and injure paint more than anything else. Although convinced of the above fact, yet the difference in durability of good paint, well applied in any summer month, is, as far as I have been able to investigate, not of sufficient importance to cause a delay in finishing work as soon as it is fully completed for painting.

NAIL-HOLES, ETC.—Previous to applying the second

coat, the nail-holes, joints and checks should be well puttied with putty colored, if the work is to be finished with this coat, or any fancy color ; but if the third coat is to be put on, then the putty may be as made, only a little hardened with whiting in either case—presuming that the putty is soft as for glazing, in which state it should generally be kept for sale or use. Most painters now-a-days putty before priming ; this is just as well for ordinary work or for white work ; but in the best buildings, and where fancy colors are to be employed, it is best to prime first, on account of the tendency of such colors to absorb heat from the sun and open the joints and checks, if any ; as well as to prevent the necessity of putting over twice, which is frequently apt to occur if puttied before priming.

SAND-PAPERING AND CLEANING.—Sand-papering the work before painting is requisite, particularly the rough places, in order to make it smooth and cleanly when done. The dust should be cleaned from the work and swept some distance away, so that any little gust of wind should not blow it in the paint. In windy weather, sprinkling, when there is plenty of water on hand, is very serviceable. In painting a nice front in a village where the roads are most dusty, and the wind is apt to send the dust directly into the paint from every wagon that passes, it would be well to employ the village sprinkling cart, as it often happens that there is one in use ; or a little expense in wetting the road in front of the premises will not be thrown away if no such convenience is to be found. Painters may say that this is a little too nice, “too particular ;” but I

have always found my account in it, not so much for the “pay” as the satisfaction of having a job done as well as *possible*. It is very seldom, however, that this sprinkling operation is necessary, though workmen cannot be too particular in dusting and cleaning their work generally.

CONSISTENCY, STRAINING, ETC.—The paint for second coating or for finishing should be thicker than for priming, and should be strained. The best strainers are of tin, made somewhat like a wash-basin, with the bottom of manufactured perforated tin, which can be procured of different grades of fineness for the purpose.

APPLICATIONS, RAINS, DEWS, ETC.—More care is required in applying these coats than in priming; otherwise the same directions may be followed generally; and to save a repetition, I refer to those respecting priming on pages 34, 35 and 36. More drier is also required in finishing, because there is less absorption of paint in the wood, and more danger of injury by sudden showers or storms. Sometimes a heavy dew will injure fresh paint if not set; therefore, in painting in such places on a building as the dew is likely to hurt, it is prudent to do it only in the forepart of the day whenever it may be convenient, according to the extent of the job, etc.; for instance, always begin to paint a piazza floor, a roof, or anything similarly exposed, in the morning, and commence at that place which gets the least sun upon it. This is a very important rule, and I have seen much damage which could never be repaired result from its neglect, by rains and dews falling in the night upon that part which was

last done and which had no sun upon it all day ; whereas, if the painting had progressed round with the sun, it is almost certain that all would have been set, and thus free from danger of being spoiled.

SQUARING.—Every part or portion of a building must be finished, or, as the term is “squared,” on the same day that it is commenced ; for if it is left not squared over night, or even for one hour, while taking dinner. as it may occur in warm weather, it will show very bad laps, which it is difficult if not impossible to remedy.

Reference may be made again to page 37, where laps are particularly described, and how to avoid them. The same directions will apply here, though it is easier to avoid them in the last coats.

MIXING.—Directions for mixing and coloring paint will be found on pages 34 and 38 ; those directions apply equally to finishing as to priming—the use of turpentine, oils, and driers also included ; only it must be remembered that the paint must be a little thicker, as before mentioned.

If a third coat is intended, it is absolutely necessary to mix the second coating with a good proportion of turpentine : in summer, it should be about one-third ; in winter, one-half. In repainting old work, sometimes more than this proportion may be used.

FLASHING.—The object of this use of turpentine in the second coat when a third is intended, and only in such a case, is to prevent what is called “flashing,” or a deadening of the intended gloss of the third coat, which totally spoils the looks of the work for a long time, though it does not materially injure the paint or

render it less durable. The last coat should be mixed with raw linseed-oil alone.

BLINDS, ETC.—The same directions given for painting blinds, fences, lattices, etc., on pages 39 and 40, will be observed here ; as well as other directions elsewhere in regard to painting on buildings.

OF GREENS.—Green paints require to be ground very fine in a good mill ; they must be ground in raw linseed-oil only, and as thick as possible, and kept in closed vessels. In using, they require more carefulness of the workman than the common paints. On blinds and lattices, green should be rubbed out well so as not to run or drip, and ought never to be mixed with white lead or other paint where a good green is desired. To mix a bronze green, add a little umber ground in oil, or simple black, also ground. Bronze color may be varied by the addition of ochre, lead, or other colors. A rich dark bronze can be made by the addition of Prussian blue ground in oil.

Where a very light green is wanted, and where it will not be exposed to the weather, then white lead or zinc may be used with it.

Paris or French green is very difficult to use ; it should be mixed, for the first two coats, with one-third turpentine and two-thirds boiled linseed oil, and in applying should be rubbed out harder than any other paint, as it is more liable to drip or run.

Three coats of it are necessary to a good finish, as it is a very transparent paint, without body, and consequently will not cover well ; the third coat must be

all oil—that is, mixed with oil alone, boiled and raw. Priming for Paris green finish must be a light green.

CRAWLING.—Painters sometimes experience a difficulty called “crawling,” particularly in winter months, in coating over a cold and glossy surface. It is a tendency of the paint to shrink or run away in all directions, leaving numerous little round openings through to the old coat, which, if left to dry in that condition, presents a very great disfiguration of the work. To avoid this, a slight rubbing with a cloth or the hand will sometimes do; but generally it is effected by hard rubbing with the brush. To guard against it, the same precautions to prevent flashing may be resorted to—that is, the use of plenty of turpentine in the previous coat; which is another case where it may be freely employed in mixing paint. In fact, turpentine in considerable quantities may be used in many parts of outside work, such as ceilings, under portions of cornices, and such like places, but should not be put in paint designed for parts that are exposed to the sun or weather.

BRICK-WORK.—In the painting of brick-work, the same general rules and directions are to be observed. Bricks, however, absorb more paint in the first and second coats than wood, and, in finishing, more care is required to prevent laps and runs. The practice of oiling brick buildings with linseed-oil by means of a sponge or brush, is good if plenty of oil is absorbed in the surface, as it has a tendency to shed the rain and dews; but painting is preferable for the same end, even

if few coats are applied, as it fills the pores of the brick.

SANDING AND SANDERS.—Sanding, which is generally done for the purpose of imitation of stone of various colors, is a matter of great utility and beauty in house-painting. If well done, it will last many years, and need not be repainted except to freshen the color or change it, or for the purpose of cleaning off the stains from dust which may accumulate. The sand should be not of the finest nor the coarsest; well dried, and sifted into the third coat, if a new building, with a sander; the best are made like a grocer's scoop, with the bevelled part of perforated tin, the holes about one-sixteenth part of an inch in size, and should be made so as to contain, when full, about four pounds of sand. They are filled through the handle, which is stopped with a plug or cork while using. Considerable skill is required to perform this part of the work, which can be readily acquired by a little practice in the use of the sander. Machines have been used for sanding to a good advantage, but I prefer the more laborious mode of the sander, as I think the work will be better done by it, besides the machines are very inconvenient for much of the work generally sanded.

The paint into which the sand is to be sifted should be mixed with nearly all oil, and put on as carefully as if for finishing-coats, and the sand must be applied while it is fresh and sifted against the surface as long as any appearance of the oil remains. The workman should examine carefully for any greasy spots, and dash on the sand again before allowing the paint to

dry or set, even. Care must be observed to keep the painting stretch, or the edge, always beyond or out of the way of the dashing or falling of the sand, for if the brush comes in contact with the sanded part, the work will be unavoidably disfigured or spoiled.

One sanding is seldom sufficient for a good solid look of the work ; a second sanding in the same manner, after the first is thoroughly dry, is more easily accomplished, though the application of the paint is more difficult. For the second sanding, the paint should be a little thinner than for the first. These directions apply as well for wood as for brick-work.

LINING.—Lining in imitation of brick is done with white, by means of flat brushes made expressly for that purpose, called “trenches” or “liners.” Where the joints are even and smooth, the lining may be done by an experienced workman without a straight-edge or rule ; but for rough work those aids are quite necessary. Lining in imitation of stone is done in the same manner with sometimes white, at others of various colors, according to taste, etc. The size of the block represented varies also according to the taste or general design. Small buildings or small portions of the same should be lined to represent small blocks, say from ten to twelve inches wide and from twenty-five to thirty-five inches in length. If the building or space be larger, the blocks may be increased in size ; but the smaller will answer for most work. In lining, great care is needed to avoid the slipping of the brush from the direct course, as in remedying such slips, the spots will unavoidably remain and look bad for some time.

In lining on sanded work, the lines should first be laid out by a chalk-line or lead-pencil and a rule; then the lines should be first traced with a dull instrument of iron or steel, to remove or flatten the sand; then the color may be put in the line thus made, by the liner, or a flat brush called a "Fitch," and should be done with a careful hand to prevent slips, which in this case are more difficult to remedy than in plain work.

BLOCKING OR SHADING IN IMITATION OF A STONE.— Sometimes an imitation of stone of various colors or shades of color is required. This is done by first lining with the lead-pencil, and then painting the blocks different shades. Three shades or colors are generally used, and they should be put on in regular succession and system, for if no system is observed in coloring, the job will not look well; but with it the work has a very pleasing effect on the eye, though the system does not appear useless it is observed very closely by a spectator. It is a good plan to number the colors on the pots or kegs, and the blocks designed to receive each, as it prevents mistakes, which are likely to occur on this kind of work. Blocking may be left plain or sanded, as any other kind of work; but if sanded, it will last much longer—in fact, sanded work, as before stated, will last many years; painters frequently say, without much exaggeration, that it lasts "forever." Blocking is sometimes made to represent veined stone, or clouded—such as blue granite with veins of quartz, or brown stone with dark or light shades—and requires some artistic skill to accomplish, both as regards the colors or shades to be used, and in

applying them. The veining or shading should be put in the blocks while the paint is yet wet, particularly if the work is to be sanded ; in any case, they will blend in better and present a more natural appearance ; though in sanded work the shading colors should be more definite, more distinct, and blended in a little less than for work to be left without the sand.

TIN AND IRON WORK.—Tin and iron work never require more than two coats, as there is no absorption ; it should not be put on as thick as on wood or brick, but should be applied as carefully and rubbed out more, because it is more apt to blister if put on thick. One coat well applied, and mixed a little thicker than for two, is very frequently sufficient for old iron or tin work if the old paint is not very much worn ; and the same may be said in regard to wood or brick work, under like circumstances ; but it is well to understand that the paint must be mixed particularly to be used as a priming or as a finishing coat ; though there may be portions of the work that will take a second or finishing coat after the one coat is dry, and which may not look as well as other portions. New iron work should, first of all, receive a good priming of pure red-lead without adulteration, mixed with two thirds boiled linseed-oil and one third turpentine. This coating will effectually prevent the rusting of the metal, if well put on. I have heard that some other “mineral” paints would accomplish the same, but I have never been willing to risk the trial.

STOPPING.—Long joints in ceilings, floors and other places, if to be puttied, should first have some paint

put into them in priming, and then when dry filled up even and tight; if the putty should fall through the joint or crack, it can be stopped by first cutting or ragging the inner edge with the knife.

TACKING.—In painting stoop and piazza floors, it frequently happens that, in consequence of too much oil being used in mixing the paint, it has a tendency to “tack,” or remain soft on the surface for a long time, allowing the feet, a chair, or a mat to stick to it, and if the floors are much used soon after painting, the work will be utterly spoiled. Sometimes this is attributable to the adulteration of linseed-oil, which it is difficult for painters to guard against, particularly in summer, as some merchants will mix an inferior oil—fish-oil sometimes, or rapeseed-oil—with the pure linseed, and thus spoil it for such work. Although I am certain that adulterated oil will produce this defect more than good, yet I am inclined to attribute it more to the heat of the atmosphere keeping the surface of the paint soft. As it is only in the hottest summer months that this difficulty occurs, I have therefore often recommended that such floors, where much used, should not be finished in June, July, and August.

DUST ON FRONTS.—From the same causes, the fronts of houses near dusty roads, are frequently covered with a coat of dust, which it is almost impossible to wash off. Painters can easily detect the adulteration in oil, and it is to their interest to buy only of those merchants who are respectable and sustain a reputation for superior goods, though their prices may be higher than others.

BEGINNING TO REPAINT.—In commencing to repaint a house of much size, the blinds should be marked or numbered, with a corresponding number on the side of the window, of sufficient plainness to be distinguished through the paint, and taken to a convenient place, where they may be free from dust or weather, and painted during rainy days, if there happens to be no other inside work, so that they may be ready to hang up again when the house is done. If the blinds do not require painting, they should be removed for a time from the rest of the work, as they are apt to get spattered, and also will not be in the way of facilitating the other painting. Begin at the top and on the most difficult and dangerous part of the building and work downward, and square at night, or on other occasions when leaving, as mentioned before. Never begin the second coat or finishing until the first is complete on every part of the house ; finish stoop-floors, however, as soon as opportunity occurs, and if, when the finishing-coat is completed, the blinds shall have been finished and thoroughly dry, they have only to be put in their places, and the painter will have no occasion to send a man to touch up and finish little portions which may have been delayed by a neglect of a straightforward system. Thus with two or three workmen, a large house may be thoroughly repainted on the outside in a few days, and its occupants will scarcely realize that they have been troubled by painters, except in the improved appearance which it presents.

DISPOSITION OF COLORS.—In fancy colors, the trimmings, such as cornices, frames, stiles, columns, and

other projections, should invariably be of the darker colors, and all siding, clapboards, filling, such as panels, recesses, and other light surfaces, should be of the light color. Window-sashes look best of a dark green, or an imitation of some dark wood, such as dark oak, black-walnut, or mahogany.

Blinds should vary in color according to the style or the architecture. For a Gothic house, they ought to be of a shade between the trimming and the body, and may be improved by having the panels light and stiles dark. For those of the Italian and other similar styles, particularly when highly ornamental, or having high towers, the same colors must be used. Sometimes those styles of building, particularly if extensive and imposing, look best of one color only; it should not be, however, a very dark one, and in that case the blinds should be of the same. In some circumstances, the Gothic looks well painted a dark stone color; for instance, when surrounded with large trees, or in a city or town. Small cottage buildings of either of the above-named styles, in whatever location or circumstances, look as well with green blinds; and it is the best color for blinds of almost all other styles of houses. The green should be kept as pure and rich as possible; light for white and light-colored houses, and darker for houses of a more sombre color. A heavy dark-green on a white or light-colored house, I think, looks bad. At a distance, one thinks they are painted black, as if the house were in mourning. Blinds painted any other colors than green or the color of the house, as directed above, never have a pleasing

effect. This does not apply to blinds hung upon the inside, which may be painted any light color.

The color of out-houses, such as barns, coach-houses, etc., and fences, should correspond generally with the colors of the main building. Some exceptions may be made, however, as in towns and villages; if the house is white, the out-houses may be of any color. This, in most cases, may be left to the taste and judgment of the owner or the painter, being particular always to keep to uniformity. Dwelling-houses and out-houses of the ordinary styles sometimes look very well trimmed with white when the main body is of the lighter drabs or browns, and some of the more ornamental styles will look well done in the same way; but this fashion is, of late years, giving way to the more sombre tints.

In painting a new building, or any portions of it, or any work designed to be finished with fancy colors, time can be saved by priming all with one color or shade. Two shades must be used in priming when the finish is designed to be of colors in which the contrast is decided—that is, of colors or shades which are very different from each other.

SAVING OF TIME.—Much time may be saved in priming buildings by making use of scaffolding of the carpenters or masons, as the work can be done quicker and better, particularly if it is very high. Cornices, in that case, should be finished from the scaffold; and in sanding, particularly, the advantage is great, as it can be done in half the time, and as not much of the sand gets in the paint, it can be saved more easily by

spreading cloths for that purpose ; besides, it is very difficult to do it well from ladders.

CLEET-SPOTS.—Cleets, or pieces of board or plank, nailed to the building for the purpose of securing the scaffolding, should be removed before the priming gets dry, and the spots thus left painted carefully over ; for if the spots are left, by leaving those cleets on until the coat is dry, it is almost impossible to prevent them showing and presenting a great disfiguration, even after several coats have been applied. But it frequently happens that the cleets must be left ; in that case, by great care in covering, the spots may be so painted as not to show much.

LADDERS.—Good ladders are a very essential means in house-painting to facilitate the work ; for with bad or unsafe ones, or those of unsuitable lengths the workman cannot get along very well. They should be made of good, straight, clear spruce stiles, and oak or ash rounds, strengthened with iron rods, about three to each of the long ones, and when not in use must be laid up on trestles together, level and straight, and should be kept well painted and wedged up in the rounds.

The workman should stand his ladder as near the work or as straight against the building as possible and consistent with his safety upon it, so as to be able to reach more work and not have to move it so often. Always see that the work under and near the top of the ladder is well smoothed or well laid off, even if it is necessary to move the ladder to the right or left to do it, for it cannot be well done with the ladder in the

way. Much care is required in avoiding marks of the ladder; in this, a skilful handling is needed. If the ground is uneven, blocking of boards or any thing suitable may be used, but caution is essential.

Ladders should never be left standing at the work after the workmen have left, unless secured by ropes or other means, for a sudden gust of wind may prostrate and shatter them, and render them unsafe or unfit for use.

FAT PAINTS.—Paints mixed for outside work, if allowed to stand for some time, become fatty, and are only fit to use on rough boards, in gutters, or some such work; for its tendency to run and drip, on account of the fatty nature, is such as to be incurable, and is sure to spoil any good work upon which it is applied. It should be used up in four weeks at least. Also, paint mixed for outside work should never be used inside; there may be exceptions, but it is best to follow strictly this rule.

ROOFS.—Roof-painting, more especially tin roof, has of late become a very important consideration.

There are some of the so-called mineral and metallic paints and other roof compositions that are very good; but my experience has convinced me that there is no better paint for tin roof than the common Spanish brown, Venetian red, and yellow ochre, mixed with pure raw linseed-oil; or, what is better than linseed alone, is a mixture of equal portions of that and a good fish-oil, which does not dry hard and render the surface brittle as linseed-oil does, but is consequently less liable to dry up or crack with the ordinary expan-

sion and contraction of the metal under it. This expansion and contraction is caused by heat and cold, and, if the paint is thick, hard, and brittle, it has a tendency to break the joints in the roofing, even where thickly or strongly soldered, thereby causing leaks. If the roof-paint is very dark, or, as may frequently be seen, black, the effect of the heat is increased and felt in summer, not only on the roof and under it, but over the whole building. Therefore I would almost insist on painting roofs a light color—say with good French ochre, which would look well on some kinds of buildings, or with zinc stained to represent the color of light slate or sheet zinc. Roofs which do not show might be painted white. Ice-house roofs, by all means, should be a very light color, if not white. But most of the trouble with tin roofs originate from the imperfect or unskilful manner, or both, of their joinings with the brick and wood work; around chimneys and in places where the brick or wood work extends above the roof, the tin has to be let in, and secured with wedges or nails, and is often merely plastered or pointed with a cement, which soon falls out, particularly if the wedging is not well done, and the consequence is a flooding of the interior of the house whenever a storm arises. Buildings which have much top-work, such as balustrades, blocking courses, observatories, and such like embellishments, are very apt to have the tin roof-work perforated with nails in places which cannot be reached; this, however, may be only on such buildings as are put up in a great hurry by contract under a ruinous competition. The best ma-

terial for jointing on tin roofs, after the wedging is done, is paint-skins boiled up and ground or chopped fine, and mixed with a little sand to thicken it like cement.

Fish-oil is perhaps the best for all kinds of roofs, but the difficulty is its drying. If on tin, it gets the surface of the paint skinned over before a rain—then it is safe; but there is danger of its washing over other parts of the house and spoiling other work. If a roof is safely done with paint mixed with fish-oil alone, it will last a much longer time than any other paint. Shingle-roof, if painted at all, should be painted with it; but any kind on them should be applied much thinner than paint for priming, for, if the paint is thick, it will hold in the joints and dry there, forming places to retain the water longer on the roof and causing rot.

Tin roofs are sometimes striped with two or more colors or shades, but do not look very well except on lightly constructed veranda or such like roof.

FARM AND GARDEN IMPLEMENTS.—Farm and garden implements being much exposed to the weather are preserved longer by being painted. Carts, wagons, ploughs, harrows, barrows, etc., may be coated with the brown or ochre, as mentioned for roof-paint, and mixed with linseed-oil, about the same thickness as for tin roofs.

Taste may be displayed in painting the bodies of wagons and carts a different color from the other parts, and blacking the iron-work, etc.

ZINC DRIER.—As I have recommended zinc paint for

all outside painting, it is as well to state in regard to it that it requires a stronger drier. A patent liquid drier is manufactured and sold for zinc, which, if of good quality, is very well adapted for it. Although zinc needs more, or a stronger drier, it is not so liable to be washed or injured by rain as the paints mixed of white-lead and other materials. But as it is difficult to get driers strong or good enough to dry properly paint mixed with unboiled linseed-oil, particularly in cold weather, it is as well to depend upon the old method of drying with litharge, which can easily be procured of good quality.

BOILED OIL.—Boiled oil is used for the purpose of quick drying and a good gloss by most painters, and where those results alone are wanted it is undoubtedly the best. But, as durability, in my estimation, is far more important, pure raw linseed-oil is much better. If the gloss is not quite so brilliant when the work is just finished, it keeps its freshness and color a much longer time. I consider that in boiling oil, just one half, if not more, of its real virtue as oil is destroyed; I would rather let the sun and weather have their own time to boil it after it is on the work. I have had painting outside stand and look well twice as long as others, and no other cause can be assigned for it but the use of unboiled oil in my work; and the risk of injury by rain or dust has certainly been no more. Boiled oil should be used only in the case mentioned above, or for inside work as hereafter directed, and machinery, sign, ornamental, and carriage painting—in fact, for almost any kind but outside finishing.

CHEAP OILS.—Of late years, there is a good deal of cheap oil made and offered for sale, and highly recommended for roof and iron work, as well as for rough work generally ; but as such oils contain more or less of resin and similar substances which have a much greater tendency to crack, become brittle, or dry quickly into powder than boiled or raw linseed, I think it unsafe to employ them on any work. They may, however, answer very well for old or rough out-houses, fences, and such like work, where durability is not an essential requisite.

CHEAP PATENT COMPOSITIONS.—There are also various recipes for compositions which cost a mere trifle and recommended as very good and durable for many kinds of work ; but as they are certain to quickly impair or wash off by the action of the weather, I believe that they are of no real advantage or benefit to the painter or his employer. Besides, sometimes it is almost impossible to paint over them with good paint, or, if possible, the cost is rendered nearly double. Any composition or mixture designed to cheapen the article of paint never works, in the long run, to the pecuniary good of the painter. The extra time required to prepare and apply them, and the general unsatisfactory appearance and rapid deterioration of the work, as also the extra quantity necessary, and damage to reputation, render it by no means a desirable or money-making business. Extreme competition in places where there are many painters sometimes compels them to use various means to under-work each other, consequently the quality of the work must suffer.

Under such circumstances, it is well, it is important, for those requiring any kind of work to be done, to appreciate those who have the best reputation, or indicate, in their dealings and intercourse generally, the most uprightness and the most independence of such competition, which alone has caused so much distrust and suspicion of this very useful profession.

SASH-PAINTING.—The painting of window and other sash, in house-painting, is one of the most difficult and important of outside work ; and on the neatness with which it is done depends, in a great measure, the beauty of the whole job. A small brush or “sash tool” is used for this purpose, and is seldom required for any other part of ordinary house-painting, and much skill, and a little regard to the system before mentioned, is required to make rapid headway in this part of the work, which is considered quite tedious ; but as the kind and style of sash are so various, the workman must exercise his ingenuity and judgment in regard to it, rather than depend upon any directions which may be given. Where blinds are closed most of the time, one coat is sufficient, or if a second coat is necessary, generally the large parts only require it. The color for sash depends generally on the color of the house, though the dark colors, such as bronze green, or imitations of some dark wood, such as dark oak or black-walnut, may look well on a house of any color or style, and in case they are concealed mostly by blinds, they can be white.

HOT-HOUSES.—In painting hot-house or green-house sashes, when new, care must be taken that the wood is

perfectly dry, as they are liable to be wet from heavy dews or from the condensation of the vapor rising inside. Paint applied to wet wood outside is sure to peel or blister. Where it is convenient, always finish the inside of such sashes before the glass is set, for it takes four times as long to do it after ; and if the glaziers will be a little careful, they need not injure the paint in the least, even where they have to bed or back-putty the lights.

The putty part of sashes should be painted within one week after being exposed to the weather, as a skin forms upon it very soon, and the paint will not take so well, and is liable to peel off. Sashes exposed all the time to the weather require to be kept well painted—not with a very thick paint, however, as that has a tendency to crack and peel ; and they should be primed in grooves made for the glass.

GLAZING.—Glazing belongs mostly in our day and country to the sash-maker, and perhaps it may be well to omit any reference to it here, except the repairing, which the painter generally has to do. And here let me give a little advice to those who may need to send to the glazier on a cold winter day, or in summer, when he may be hurried with work, to set a light or lights of glass ; and that is, to measure with a rule the exact width and length of each light, being particular to measure so as to include the space where the putty lays, or the measure may be taken on the inside from the narrow edge of the bars, which is the same on most sash as the space outside filled with the glass ; write the measure down plainly so that there may be no

mistake, and you will save the glazier much unnecessary trouble and risk of breakage ; for, if he sends a boy to do it, the chances are that the work will not be well done, that more lights will be broken than new ones set, as no place to cut them can be found as good as the shop-board ; or the diamond may be spoiled by an unskilful hand, or the lights taken may all be too small or too large. So, under these disadvantages, and others, such as distance and weather, a man, or the boss himself, would be likely to make equally as bad a job, and suffer much loss through not getting sufficiently remunerated, or not having the heart to charge as much as the job is really worth. All this difficulty is avoided by sending the exact measure and number of lights ; besides the glazier will be more ready, more prompt, and more reasonable in the charge.

The old putty must be removed with a sharp chisel or a stout knife, very carefully, not cutting away or splitting the sash. After cleaning out every particle of the old glass and putty, the new light should be set in with the bow or rounded side out, and tinned in with at least four points* or more, according to the size of the light ; the putty then may be put on, taking care that its edge on the glass is even with the wood inside and straight and clean ; then clean off with a duster and whiting, or, if that is not handy, a soft cloth will do if used carefully so as not to disturb the putty. Nothing looks worse or is a greater eyesore than a botched job of glazing ; therefore, I have been thus particular over what many may think a matter of trifling importance.

BLISTERS.—Bad blisters in the paint on front doors, vestibules, and such like places where the sun concentrates its rays the most, are caused by little spots of pitch in various parts of the wood-work being acted upon by the heat, forming a gas, which raises the paint. There are several remedies for this: one is, to see that, in making the door or other part so exposed to the sun, the wood contains no particle of the pitch. Sometimes these spots of pitch are very fine and diffused throughout a whole plank, so that ordinary scrutiny fails to detect them, yet they produce bad blisters when exposed to heat. Some plank contain no such spots or pitchy grain, and such only should be used for the work before mentioned. Such portions of work generally get more frequently painted; and the thicker the paint, the more it will blister. If an old door, rubbing down to the wood will not remedy the evil, for the cause is still there. In that case, or when it is found that there is pitch in the wood, the other remedy is to keep it painted white or light as possible, and the coats as thin as can be put on. Doors, etc., on the south side of a street, or in situations where there is but little sun, may be made of any quality of wood, or painted any color, or as thick as it may be put on, and no blistering will occur. Coats of paint or varnish may be, however, too thick in either case. There is scarcely any varnish made that will stand on a front door, particularly if put on thick. It is better, in both instances, where such work requires repainting or varnishing, to do it often and very thinly.

RUBBING DOWN.—Rubbing down, being referred to

above, is often required where paint or varnish becomes cracked or burned by exposure; it is done by a lump of pumice-stone with water and a sponge; the stone must be kept flat, even, and as free from paint as can be by rubbing it often on a flag or file. After the pumice-stone, then use sand-paper. Where the work is very much cracked and rough, paint may be used instead of the water, by first heavily coating the work, and then rub with the stone until it is sufficiently level, then lay off the paint as for finishing, and sand-paper it when thoroughly dry. Small pieces of pumice-stone should be used for the moulding and corners.

OLD PAINT.—Old paint may be removed by a solution of potash in water, by applying it with a sponge or brush, until the paint is softened, then peel it off with the putty-knife or chisel.

SMOKY PAINT.—Previous to painting over smoky or greasy surfaces, a weaker solution of potash should be applied to every part, and left upon it for twelve hours, and then cleaned off.

PREPARING.—The work must be clean, dry, and well dusted, and the room swept; then putty all nail-holes, joints, checks, or other places which require it, taking care to leave nothing in this particular undone, for the painter should not leave his brush after he has once taken it up to prime, to putty the work over, or do that which has been omitted. Then the knots and pitchy places must be covered with the shellac-varnish; and when that is dry, then the priming may be applied.

SHELLACING.—All good inside work should have, previous to priming, a coat of shellac-varnish, the same

as for killing the knots, except that it should be reduced with alcohol one half, and applied over the whole work with a flat or other convenient brush. This prevents the pitch and sap in the wood from showing through the paint when finished. Without this shellacing, the white work looks very bad, even after being repainted several times; and where zinc-white is used, it will bring out the pitch much worse than lead. Work intended to be grained does not require it, but it is best to apply it, as it makes the work better.

PRIMING.—White-lead mixed with one half boiled oil and one half turpentine, should constitute the first coat of paint on inside work. Driers may be used in cold weather, but in warm the oil itself may be sufficient. It is essential to get on as thick a coat as possible, therefore lead is preferable to zinc, as it has more body and covers the grain of the wood or the shellac better. It should be thin enough to work easily under the brush, though not without somewhat more rubbing or bearing on than for outside. If it is not rubbed out well in applying, it is apt to drip, and collect in the corners and mouldings. The paint should be well strained before using.

WET WOOD.—Dampness from wet walls or other cause must be removed from the wood before priming. In new houses, the work is frequently covered with wet from the condensation of moisture from new walls upon it, and should not be painted in that state, but means taken to dry it first. If to dry it by fires in the rooms might be too expensive, the windows may be

opened throughout the building during the warmest part of each day when the sun is out, which would effect the object, though perhaps not so quickly. Rooms finished in a hurry, regardless of these necessary rules, on account of their being immediately wanted, are very dangerous places to live in as regards health, and the paint is generally blamed for much mischief done in that respect, of which it is entirely innocent; besides, the work is, if not spoiled, stained and discolored so as to necessitate a repainting very soon, and the painter consequently very often blamed for bad work by those who could not have known the cause of the trouble.

PRIMING FOR GRAINING.—If the work is designed to be grained in imitation of dark wood, including some shades of oak, the priming should be stained a little so as to be about the same tint as the wood intended, because if primed white, it will be apt to show in joints which may in time occur, or in any accidental dents or scratches.

CLEANING.—The plaster and dust should be cleaned off from new wood-work, preparatory to priming, without using water—or as little as possible; for the wet will raise the grain and make the work very rough. It can be cleaned in the same time and with no more labor by old sand-paper or a block of wood, and a dry scrubbing-brush, dusting off afterward with the duster.

WHITE-LEAD PUTTY.—Some putty is apt to show through two coats of white, therefore it is very useful to mix a little white-lead with it; about one third in

bulk of lead will answer to make it considerably whiter ; and it will be covered better with the paint.

SUITABLE BRUSH.—A brush of the largest 6 O size, about half worn, is the best for inside priming ; a new one, or one too much worn, would make rough work, unless more time and care is used. In working rapidly, the brush is sometimes apt to spatter the paint on the floor ; in such cases, it is well to have a cloth or a large sheet of stout paper to spread down to work on.

DROP-CLOTHS.—Drop-cloths are very useful, and should be in readiness in many kinds of work to guard against danger of spattering. The best workmen require them when painting in rooms with the carpet or oil-cloth down, and they can work much faster with them ; it is therefore no indication of a careless workman, but rather the contrary.

SYSTEM.—The importance of system in painting, spoken of elsewhere, must not be lost sight of in priming inside, for upon it depends a saving of much time.

OLD WOOD-WORK.—Where old work inside requires more than one coat to finish, the priming should be mixed with less oil than for new work. One quarter to three quarters of turpentine is sufficient, sometimes even less. In case the work is in good condition as regards previous painting, the first coat may be mixed the same as for finishing.

WHITE SHELLAC.—Old wood-work requiring to be repainted is sometimes very badly discolored from pitch and sappy spots in it. To prevent these from showing again, the spots must be covered over with a

coat of bleached shellac-varnish, made by dissolving white shellac in alcohol the same as that for killing knots and shellacing new wood-work. The alcohol for this purpose requires to be of the best quality, and the varnish to be kept well corked in cans or bottles. Both the white and brown shellac-varnishes can be bought ready to use, and are about as cheap as for the painter to make them, as some difficulty and danger attends the preparation. White shellac may ere long be cheap enough to allow of its being used for new work as well as for all other; in fact, it may be best to use it at any rate, for it does not stain the work so darkly as the brown, and is covered easier. To make shellac-varnish, dissolve one pound of gum-shellac in one gallon of good alcohol; if the alcohol cannot be procured of the best quality and purity, the application of heat will be necessary, by putting the can containing the gum and alcohol in a kettle of boiling water, and stirring it frequently, and being careful to leave a vent to prevent an explosion.

PREPARING.—The priming must be thoroughly dry, and then sand-papered down, in case there are any rough places, or dust dried in the priming. If any stains from pitch should appear, apply the white shellac previous to finishing, and be careful to dust off the work well; and also it is necessary to have the rooms swept out, that the work may not get dusted while wet, by letting the dirt be swept by currents of air upon it when a door or window may be opened. The work should be examined to see if any puttying is omitted, and this must be seen to before commencing to paint.

FLATTING.—Finishing-coats for ordinary work are mixed with turpentine alone, without any oil except that in which the lead or zinc is ground, and must be applied very carefully, skillfully, and at the same time very quickly with a good brush ; each portion of the work must be finished before leaving it for a moment, and the joinings around panels at the end of cross-stiles and such like places, or on large spaces, must be kept wet until the whole is done ; then it has a very beautiful, uniform dead look when dry, and is called by painters “ flatting.” In flatting walls or ceilings, two more workmen are necessary to work together to keep the joinings always wet until finished, and they should have their scaffolding or steps so arranged that the least possible delay occurs in moving them, otherwise the paint will set at the joinings and spoil the flatting, and it is impossible to remedy such defects but by rubbing down and doing the work over again. Flatting heavy work or large spaces must be done in closed rooms : no current of air should be allowed to draw through and over the work until finished, as it will set the paint too fast to work safely. Brushes for this kind of work must be of the finest and best kind, little and evenly worn. Uneven walls and badly planed wood-work, when painted in oil-color, or glossed, show plainly every ridge and defect, which does not appear in flatting ; thus the term “ flatting.” It is very seldom that walls are made perfect enough to finish with a gloss or varnish ; or wood-work dressed with sufficient care, particularly on contract work, to finish with porcelain or enamelled surface, or to look well when

highly varnished ; therefore it is preferable in most cases to flat the work where neatness or perfection is desired in the painting. Flatting when dry is very hard, but soap, in scrubbing and cleaning, will dissolve or cut it, and therefore does not do very well for kitchens or parts where much cleaning is required ; but for parlors, bedrooms, halls, and such like places, it is lasting and durable, and when requiring to be cleaned, generally clear water is sufficient. Boiled oil, more or less, according to the place, added to flat color, renders it harder, and suitable for kitchens and other like places. Where a third coat for finish is intended, the second coat should be flatting color, with the addition of a little raw linseed-oil, about a gill to ten pounds ; this gives more time to work the paint, the oil preventing it from setting quick, and also allowing the room to be open in case of hot weather, and thus making it more comfortable for the workmen ; otherwise, both coats may be of the flatting color. The consistency of flat color depends somewhat upon circumstances. It should be thin enough to work easy, not apt to run down the joints and carvings, and thick enough to cover the woody color of primed work, which will easily be accomplished if the priming has been sufficiently good and stout. A material object in flatting is the tendency of the paint to retain its original and intended purity of tint ; flat white will remain white, but finishing-coats, with even a small proportion of oil, in rooms closed or partially closed most of the time, will turn yellow, and other colors, which will turn darker.

System is particularly requisite in flatting, as without it such work as windows, doors, and inside shutters and blinds cannot be well done ; and it is in this kind of finishing that the workman soon finds the necessity of observing it very strictly. Different workmen may have different systems for particular portions of work, but as long as it is a definite one, it does not much matter.

EGG-SHELL GLOSS.—Rooms that are kept very light most of the time may be finished with what is termed “egg-shell gloss”—that is, by adding oil to flat color in small proportions sufficient to prevent its drying positively dead or flat, but having an oily surface when dry, yet not positively glossy. In light rooms, this kind of finish will retain its original tint and endure much longer, and bear more cleaning than flatting. It is about the same as color mixed as directed where a third coat is intended.

TINTING.—Painting rooms in parti-colors or tinting the panels one shade and the styles another, and sometimes the mouldings a third, is a very beautiful finish, and in some cities has been a prevailing fashion.

In most cases, the two last coats should be tinted, but sometimes the last one is sufficient, particularly if the shades to be obtained are not very dark. The color must be divided into as many parts as shades are wanted, and in proportions equal to the amount of work to be done with each, then adding fine ground colors, such as vermilion, blue, yellow, umber, India red, lakes, ochre, and such like materials, of the best qualities, in kind and proportion to produce the desired

tint. They may be applied all at the same time and the work finished, or, as will be the best way, the principal shades may be used first, such as on panels and stiles, and when dry or set, then the other tints may be put on.

GLOSS OR ENAMEL.—Where the woodwork is well finished and dressed smooth and level, gloss or enamel makes a very fine and beautiful, as well as durable finish. It is done by first having a good ground of white-lead paint, flatted and finely rubbed down with fine sand-paper, put on the work; then put into the paint some good demar or white copal-varnish, sufficient to leave the egg-shell gloss when dry; being very careful that it is applied smoothly and laid off finely, leaving no runs or strong brush-marks; then apply the varnish along with just enough paint to color it. This last coat must be flowed on the work, not rubbed out or brushed like the previous coats, but left on thicker or in greater body, evenly brushed out so as not to be thicker in one place than in another, or full in the mouldings so as to run out over the stile or panel. Quickness and carefulness are very requisite in the finish. Zinc-white of the best quality should be used for the last two coats, broken up thick with turpentine and strained very fine. Enamel-finish, to retain its pure white, should be made with zinc ground in varnish for the purpose, the first coat thinned with turpentine, the last with good demar or copal-varnish. If the varnish is old and thick, a little turpentine must be used to thin it. Zinc ground in varnish as above can be procured in sealed cans at the stores where the

best materials are sold. It should be remembered that stains from pitch in the wood must first be covered with the shellac previous to finishing for gloss or enamel.

GROUND COLORS FOR GRAINING.—Most kinds of imitations of woods are done with oil-colors; the old-fashioned water or beer colors are done away with, except in some woods not much imitated in the present day, such as rose, maple, and mahogany—these latter require a ground nearly flat; but for oak and black-walnut, the ground should be a good gloss, and for new woodwork three coats are necessary to make good graining, and the paint must be well strained and carefully put on as if for the best finish. The color for oak is to be tinted with good ground ochre and red; if for dark oak, to about the shade of salmon color; if for light, just a mere straining or tinting from white; or even white itself will do for very light oak. For black-walnut, the ground is to be composed of white ochre and umber, to get the shade of the lightest parts or dry black-walnut wood. For mahogany, get a dark orange color with ochre, white and red. For rose-wood, pure vermillion is the best, though a good brilliant red may serve the purpose. For maple or satin-wood, pure white with a trifle of chrome-yellow; some grain it on pure white. The shades of graining of the various kinds can be varied by the graining and shading, and other artistic effects must be produced by the skill and taste of the workman. And now having guided the painter thus far, I take my leave of him, hoping that he may continue to advance to the highest degree of perfection in his art.

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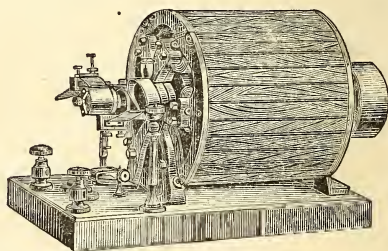
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